

XIII. *Observations on the Genera of Trollius, Eranthis, Helleborus, Coptis, and Isopyrum.* By Richard Anthony Salisbury, Esq. F.R.S. and L.S.

Read March 19, 1805.

THERE is no branch of Botany less attended to by modern authors, or on which the solid advancement of the science more depends, than the Genera of Plants; and to reform many of those already constituted is become almost as necessary, as to describe the new ones which are daily introduced. The study of them is indeed difficult, for it requires a profound knowledge of the whole Natural Order to which they belong; but it covers those who excel with glory. Our first vernal flower, the *Winter Aconite*, which I lately saw in great abundance, has given rise to the above reflections. This plant appears to me a distinct genus, nor can I find any affinity whatever in it, to that in which it has hitherto been placed, beyond the common characters of the order; for the same Nectaria occur in several others.

Linnè, in his *Philosophia Botanica*, has left us a precept which cannot be too often inculcated, "*Characterem non constituere genus, sed genus characterem*;" and he has afterwards said with honest exultation, "*Nectarium ne nomine notum erat antequam idem determinavimus.*" His time indeed was too valuable to be employed in cavilling about terms; but as I still think with him, in opposition to the high authority of Jussieu, that the Nectaria

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ria of this Natural Order are not Petals, it is incumbent upon me at least to give my reasons for this opinion.

The general laws of Nature are so uniform, that, if we deviate from them on any other ground than that of actual facts, we meet unsurmountable difficulties. The present question, therefore, can only be determined by reasoning from the analogy of other vegetables, which if closely investigated, I think, refute rather than confirm the doctrine of the French School. Now, in the whole class of *Polyandria*, the Calyx is comparatively of little importance, often coloured and by degrees running into the Petals, or entirely wanting: the Corolla on the contrary is large, showy, almost invariably present, and seldom melliferous. Is it not then surely more philosophical to describe those additional parts, which from their very size and figure seem constituted solely to secrete and hold honey, by the appropriate name of Nectaria, than to raise them to the proud and exclusive dignity of the Petals, degrading these last into a mere outer cover? Has it never occurred to Jussieu, that the same reasoning by which he admits these Nectaria to be Petals, would alone overturn his favourite hypothesis of Monocotyledonous plants having no Petals? for there is no difference in this respect between the calcarated Nectaria of *Orchis* and *Aquilegia*.

Vaillant seems to have been the first botanist who suggested the idea that the production of honey was an essential characteristic of the Corolla, referring the other parts of the flower usually so called, to the Calyx. Linnè, as if endowed with a prophetic spirit of the inconsistencies that would spring up from such a definition, has shown its fallacy by an unusual number of examples: first, where Calyx, Corolla, and Nectarium all exist separately in the same flower: secondly, where the Nectarium is attached to the Corolla, both in monopetalous and polypetalous

lypetalous flowers : thirdly, where it resides in the Calyx only : fourthly, where it is placed either on the Filaments, or the Anthers, or the Ovarium, or the Receptacle : lastly, where its structure is quite different from that of every other part, and anomalous. He might also have added instances of the Herba producing melliferous glands, as in *Gossypium*, *Mimosa*, and *Prunus*. There can be no doubt that the Nectaria of this Natural Order are much nearer allied to the Corolla than the Calyx, especially in *Nigella*, *Delphinium*, and *Aconitum* ; but it by no means follows, that they are the sole and legitimate Petals, nor will any subtilty reconcile the incongruity of calling one and the same part in *Trollius* and *Caltha*, by two different appellations.

I now proceed to state the characters of the beautiful little plant first mentioned, and some of its neighbouring genera, taking them as I think they should follow each other in a natural series.

RANUNCULACEÆ Juss.

Sect. 2. *Pericarpia polysperma*.

TROLLIUS.

Corolla 5—12-petala, decidua. Nectaria 9—17, petalis minora, ligularia. Pericarpia 30—60, sessilia, dense imbricata. *Stipulæ a basibus petiolorum dilatatis vaginales. Folia plura radicalia, digitata, inciso-dentata, herbacea ; caulina brevius petiolata. Flores lutei, flavi, vel aurantiaci, terminales, 1—5, rarè paniculati.*

sphæricus. Petala arcte conniventia. Nectaria angusta sub staminibus recondita. Stigmata brevissima.

T. europæus. Smith in Engl. Bot. n. 28. cum Ic.

T. europæus. Linn. Syst. Veg. ed. 14. p. 518.

Helleborus caule &c. Linn. Fl. Lapp. p. 226.

sertiflorus.

sertiflorus. Petala incurvo-patentia, obtusa. Nectaria longe ultra stamina serto posita.

T. asiaticus. Curt. in Bot. Mag. n. 235. cum Ic.

T. asiaticus. Pall. Reis. v. 2. p. 528. *T. asiaticus.*

Linn. Syst. Veg. ed. 14. p. 518.

laxus. Petala incurvo-horizontalia, retusa, crispula. Nectaria parum ultra stamina.

Sponte nascentem prope Lancaster in Pennsylvania legit H. E. Muhlenberg.

Ni fallor legitima species est: flores flavi, nec aurantiaci, etiam minores quam in præcedente.

patulus. Petala quinque vel sex, incurvo-horizontalia, obtusa. Nectaria parum ultra stamina.

Helleborus ranunculinus. Smith Pl. Ic. ined. n. 37.

Helleborus niger orientalis, Ranunculi flore &c.

Tourn. Cor. p. 20. *T. humilis* flore patulo. Buxb.

Cent. 1. p. 15 & 22.

Figuram suam ad specimen Herbarii Tournefortiani delineavit Præses, et fructus in exemplari Banksiano deest: si stipitatus, ad proximum genus referenda erit hæc planta, certe non ad Helleborum ob corollam deciduam.

ERANTHIS.

Corolla 6—7-petala, decidua. Nectaria 5—7, petalis longe minora, cucullata. Pericarpia 3—11, stipitata, dum pauciora stellata. Stipulae parvæ, radicales. Folia 1—2, radicalia, digitata, inciso-dentata, herbacea. Flos luteus, disco folii sessilis. Nomen ab *εραω* amo *ανθος* flos: floribus tempestate inclementi amabilibus.

hyemalis.

hyemalis. Petiolus lucidus, æquatus.

Helleborus hyemalis. *Curt. in Bot. Mag. n. 3. cum*

Ic. Helleborus hyemalis. *Jacq. Fl. Austr. v. 3. p. 1.*

t. 202. Helleborus hyemalis. *Linn. Sp. Pl. ed. 2.*

p. 783. Aconitum hyemale. *Camerar. Epit. p. 725.*

Petala sæpius 6, interdum 7, nunquam 5 vidi.

HELLEBORUS.

Corolla 5-petala, persistens. Nectaria 5—12, petalis longe minora, cucullata. Pericarpia 2—9, stipitata basibus plus minus coadunatis, dum pauciora stellata. *Stipulæ nunc radicales, nunc e basibus petiolorum dilatatis. Folia 3-nata, palmata, vel pedata, radicalia vel caulina, coriacea. Flores solitarii paniculative, pedicellis unibracteatis, sæpius virescentes.*

* *Pedunculus ante folia radicalis.*

*grandi-
florus.*

Folia pedata. Pedunculus 1—2-florus. Bracteæ ovales.

H. niger. *Curt. in Bot. Mag. n. 8. cum Ic. optimâ.*

H. niger. *Jacq. Fl. Austr. v. 3. p. 1. t. 201.* H. ni-

ger. *Linn. Sp. Pl. ed. 2. p. 783.* Elleborus niger, legitimus. *Clus. Hist. Pl. p. 274.*

Flos albus cum rubore aliquo, speciosus: titulus e colore radicis omnibus speciebus competit.

viridis.

Folia vix pedata, digitata. Pedunculus 2—5-florus. Bracteæ 5—3-fidæ.

H. viridis. *Smith in Engl. Bot. n. 200. cum Ic.* H. vi-

ridis. *Jacq. Fl. Austr. v. 2. p. 4. t. 106.* H. vi-

ridis. *Linn. Mant. p. 408.* H. viridis. *Linn. Sp. Pl. ed. 2. p. 784.*

Flos totus pallide viridis, etiam nectaria.

officinalis.

officinalis. Folia pedata, laminis latis. Pedunculus multiflorus.
Petala acuminulata.

H. *orientalis.* *Lam. in Encycl. v. 3. p. 96.* H. *niger*
orientalis amplissimo folio, &c. Tourn. Cor. p. 20.

Flos viridi-purpureus: proculdubio est planta officinalis antiquorum.

** *Pedunculus ultra folia terminalis.*

lividus. Folia glauca, ternata. Petala patentia.

H. *lividus.* *Curt. in Bot. Mag. n. 72. cum Ic. bonâ.*

H. *lividus.* *Soland. in Ait. Hort. Kew. v. 2. p. 272.*

H. *niger trifoliatus.* *Ald. Hort. Fam. p. 93. t. 92.*

Flos sordide purpureus.

foetidus. Folia viridia, pedata, laminis angustis. Petala in poculum curva.

H. *foetidus.* *Smith in Engl. Bot. n. 613. cum Ic.* H. *foetidus.* *Linn. Sp. Pl. ed. 2. p. 784.* H. *ramosus &c.*

Hall. Hist. v. 2. p. 1193.

Flos viridis margine demum atro-rubro.

COPTIS.

Corolla 5—6-petala, caduca. Nectaria 5—6, petalis minora, cucullata. Pericarpia 6—10, stipitata, stellata. *Stipulae* 2, *radicales.* Folia pauca, radicalia, 1—2-ternata, spinulose dentata, rigida. Flores albi, solitarii 2-native, terminales.

Nomen ab herbâ incisâ: κοπτω scindo.

trifolia. Folia ternata. Pedunculus 1-florus.

Helleborus *trifolius.* *Michaux Fl. Bor.-Amer. v. 1. p. 325.* Helleborus *trifolius.* *Fl. Dan. t. 566.* Helle-

borus trifolius. *Linn. Sp. Pl. ed. 2. p. 784.* Helle-

borus trifolius. *Linn. Amæn. Acad. v. 2. p. 356.*

t. 4. f. 18.

Flos *Trientali* haud absimilis.

asplenii- Folia biternata, laminis subpinnatifidis. Pedunculus
folia. 2-florus.

Sponte nascentem in oris occidentalibus *Americæ
Borealis* legit A. Menzies.

Petala, quantum e specimine Banksiano sicco patet,
multo longiora quam præcedentis, et lineari-attenu-
ata. Pedunculus quasi bifurcus ramis in fructu
elongatis. Antheræ orbiculares apice retuso.

ISOPYRUM.

Corolla 5—6-petala, caduca. Nect. 5—6, petalis minora, cu-
cullata. Pericarpia 3—17, sessilia, dum pauciora stellata.
Stipulæ 2, e basibus petiolorum dilatatis. *Folia radicalia
pauca, caulina plura et sensim minora, 2-ternata 3-natave, late
dentata, herbacea. Flores albi luteive, solitarii 2-nive, axil-
lares.*

thalictri- Stipulæ latæ. Folia laminis inciso-3-fidis. Pericar-
folium. pia 2—4.

I. thalictroides. *Jacq. Fl. Austr. v. 2. p. 3. t. 105.*

I. thalictroides. *Linn. Sp. Pl. ed. 2. p. 783.* Thalic-
trum batrachioides, &c. *Bocc. Mus. p. 84. t. 79.
f. 1.*

Flores albi.

fumariæ- Stipulæ augustæ. Folia laminis pinnatifidis. Peri-
folium. carpia 9—17.

I. fuma-

I. fumarioides. Linn. *Sp. Pl. ed. 2. p. 783.* *I. stipulis subulatis, &c.* Will. *Obs. n. 44.* *Helleborus fumariæ folsiis.* *Amm. Stirp. Ruth. p. 74. t. 12. bona.*

Pericarpia stellata descripsit Willich: sic profecto sunt exteriora, reliqua vero dense imbricata.